X-Plain™
Stress Echocardiogram
Reference Summary

A stress echocardiogram helps a doctor see images of the heart before and after exercising. By comparing the results, the doctor can learn a lot about the health of the heart. Your doctor may request for you to have a stress echocardiogram, or stress echo, performed.
This reference summary will explain why stress echocardiograms are needed and what you can expect during a stress echo.

The Heart

The heart is the most important muscle in the body. Its main function is to pump blood to the lungs and to the rest of the body.
The heart is formed of 2 sides: the left side and the right side. Each side is divided into 2 chambers: an atrium and a ventricle.
Blood from the body goes through big veins to the right atrium of the heart.
From the right atrium, the blood is pumped to the right ventricle.
The blood then gets pumped to the pulmonary artery and into the lungs. In the lungs, the blood is loaded with oxygen and carbon dioxide is released.
From the lungs, the blood returns to the left atrium, then to the left ventricle.
From the left ventricle, it gets distributed to the rest of the body through the aorta, which is the biggest blood vessel in the body.
Since the heart is living tissue, it needs blood like the rest of the body. The heart pumps blood to itself through many blood vessels that go directly to the heart muscle. These are known as coronary arteries.
A smooth membrane called the pericardium also surrounds the heart. This allows the heart to beat smoothly.

Heart Disease & Echo

The heart can be affected by various heart diseases. Heart disease is the #1 cause of death in the United States.
Some diseases of the heart cause the blood vessels of the heart to clog, which can lead to heart attacks. These are called coronary artery diseases.
Other heart diseases affect the valves of the heart and cause them to either narrow too much or to become leaky. When valves get narrow, it becomes difficult for the blood to go through; when they are leaky, blood is allowed to flow backward, which decreases the effectiveness of the heart.
Some heart diseases affect the muscle of the heart and make it weak.
Infections can involve the valves, as well as the heart itself.
Blood can clot inside the heart, increasing the risk of having a stroke.
The pericardium, or heart covering, could get infected or fill up with fluid.
Your doctor can learn a lot about your heart by listening to its beat, and by measuring your pulse and blood pressure. An EKG, or a heart tracing, can also be very helpful. However, the echo test allows the doctor to get an image of the heart without inserting anything into the body.
With an echo test, your doctor can find out:

- How your heart chambers and valves are working
- About blood flow inside your heart

- About any inflammation of your heart membrane
- How strong your heart muscle is after a heart attack
- If there are any heart tumors.

The comparison between the echo before and after exercise helps the doctor determine how well the heart can deal with increased activity. Some heart abnormalities do not show up until the heart is forced to beat faster or harder.

How Echo Works

To create an image of the heart, sound waves are sent from a device that is placed on the chest, directly over the heart.
As the waves touch the heart, their echo bounces back to the device. The speed and intensity of the echo carries information about the heart tissue. This information is made into an image.
This technology is similar to the one used in ultrasounds of pregnant women.
The doctor can read the images to learn about the muscles, valves, and other structures and functions of the heart.
You should not eat for 3 to 4 hours before a stress echo test. It is helpful to wear comfortable clothing, with a shirt that is easy to unbutton or take off.
If you take medication, check with your doctor to find out whether you should take your medicine on the day of your stress echo test.
The echo produces animated pictures of the heart that show the heart contracting. It can also show blood flowing inside the heart.

During A Stress Echo

You will be asked to remove the clothing on your upper body and lie down on a special bed.
The technologist will attach electrodes to your chest, wrists, and ankles. These will be used to record an EKG at the same time the echo is taken. Blood pressure is monitored too.
A special lubricant gel will be placed on the chest and on the device that sends the waves, the transducer.
A technician will move the transducer over your chest, while slightly pushing on it.
The technician may ask you to adjust the way you sit or to breathe a certain way. He or she will also ask you to sit very still during the test.
After taking your echo at rest, you will be asked to exercise by walking fast on a treadmill or by using other exercise equipments that increase your heartbeat.
Some patients may not be physically able to exercise due to arthritis or other medical conditions. In this case, you may be given some medications to increase your heart rate instead of being asked to exercise.
After increasing your heart rate, you will be asked to lie down immediately so that a second set of echo images can be recorded. The second set will show the heart beating hard and recovering.
The stress echo is painless and involves little risk. Tell the technician if you feel chest pain, arm pain, short of breath, uncomfortable, or dizzy. It is best to just relax. If you are interested, you could ask your technologist for a peek at your own heart!
The whole stress echo test should only take from 1 to 2 hours. At the end, the technician will remove the electrodes and help you wipe any remaining lubricating gel from your chest.

After An Echo

The stress echo is an outpatient procedure, which means you will go home after the test. You can resume regular activities after a stress echo.
The doctor will analyze the 2 sets of images, then discuss the results with you. Ask your doctor when the results will be ready.

Risks

The stress echo test is very safe and painless. There are, however, several possible risks and complications. These are very unlikely, but possible. You need to know about them just in case they happen. By being informed, you may be able to help your doctor detect complications early.

In rare instances, you may feel some chest pain, chest tightness or pain in your left shoulder, arm or jaw. You may also experience some chest tightness and difficulty breathing. Any of these could be signs of a heart attack. You should inform your technologist or doctor right away if you have any of those feelings. By looking at your heart tracing, or EKG, she or he may be able to confirm the heart trouble you are experiencing.

If you still feel pain after you're done exercising, immediate help will be available at your doctor's office or the hospital where the test is being performed.

Summary

A stress echocardiogram, or stress echo, can be a very helpful test for showing your doctor how well your heart works.

The stress echo is a painless test and involves little risk. Make sure to tell the technician or doctor if you feel pain, fatigue, or discomfort.

After reading your stress echo, your doctor may be able to help you improve your health, if needed, so that you can enjoy life to the fullest!